

## ABSTRACT

Provided is a hologram retrieval method and a holographic recording and reproducing apparatus for preventing an increase in SNR, a decrease in retrieval accuracy, or the retrieval itself from being made impossible, which would otherwise occur because of a small size of data used for retrieval. Digital information is recorded on a holographic recording medium as data pages DP formed of a two-dimensional bit map image with each page being multiplexed. The data page DP is divided into a plurality of equal data blocks DB11 to 13, DB21 to DB23, and DB31 to DB33, and each data block DB is provided with a data image that is encoded by an encoding method for providing a certain number of ON pixels within each data block DB. A spatial light modulator allows the to-be-retrieved data image to be encoded by the encoding method and displayed as block information on a retrieval data block associated with the data block, and a signal beam to be thereby modulated. Of resulting diffracted beams, the diffracted beam of the maximum intensity is used to detect the target data image and the address of the reference beam.